

AIRCAM AVIATION SERIES

№ 31

VOUGHT F-8 CRUSADER

IN USN-US MARINE CORPS & AERONAVALE SERVICE

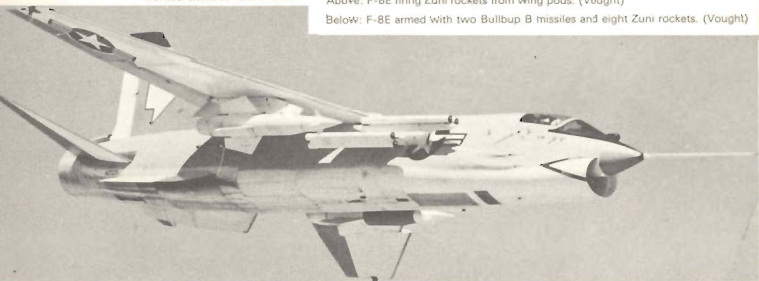




ARMAMENT DETAILS

Above: F-8E firing Zuni rockets from wing pods. (Vought)

Below: F-8E armed with two Bullbup B missiles and eight Zuni rockets. (Vought)

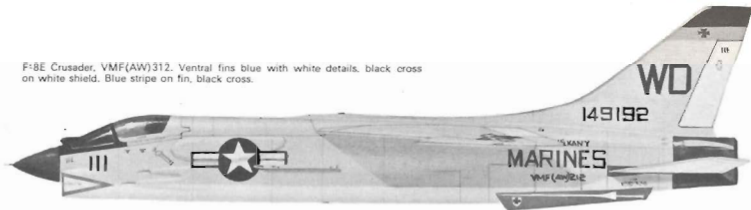


Above: F-8E with 4 x 500 lb bombs under each wing and eight Zuni rockets. (Vought)

Below: F-8E with 2 x 2000 lb bombs on wing pylons. (Vought)



F-8E Crusader, VMF(AW)312. Ventral fins blue with white details, black cross on white shield. Blue stripe on fin, black cross.



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**Illustrated by
Richard Ward**

**Compiled by Richard Ward
and Arthur L. Schoeni**

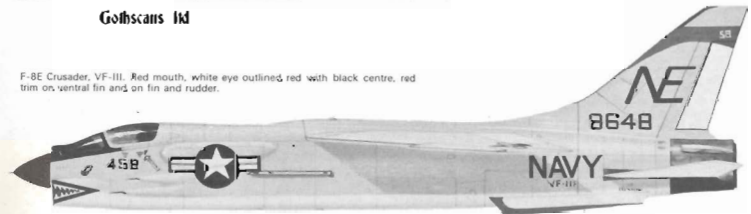
**Text by
Robert Kopitzke**

Gothscans Ltd

ACKNOWLEDGEMENTS

The F-8 Crusader, for over a decade the World's fastest single-engined Naval fighter is a fitting follow on to the Vought F4U Corsair (AIRCAM No. 23) of World War II fame. Thanks are due in alphabetical order to all those who co-operated with photographs and information whose names are listed below. A special word of thanks must go to Arthur L. Schoeni, Customer Relations Dept., Vought Aeronautics Company, who has been ever ready to provide assistance with information and photographs; my thanks to all, Rene J. Francillon, R. D. Frey and the Air Force Museum Staff, A. R. Krieger, George J. Letzter, Katsuhiro Minoura, Tom Mitchell, Merle Olmstead, Arthur L. Schoeni, United States Marine Corps, United States Navy.

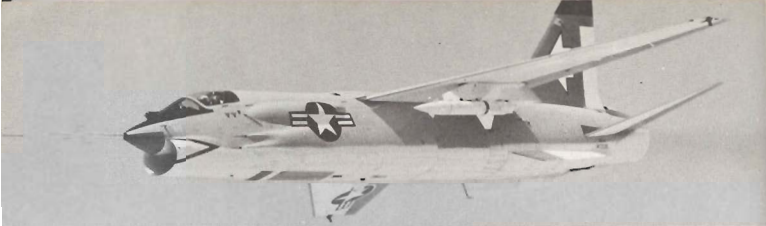
F-8E Crusader, VF-113. Red mouth, white eye outlined red with black centre, red trim on ventral fin and on fin and rudder.



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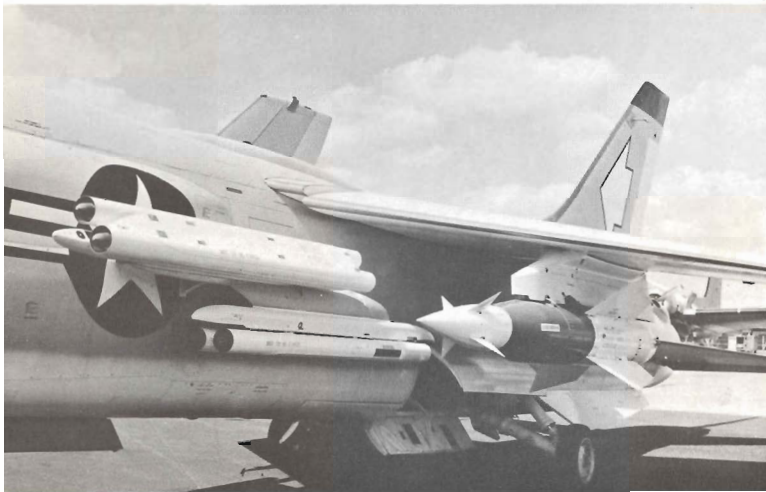


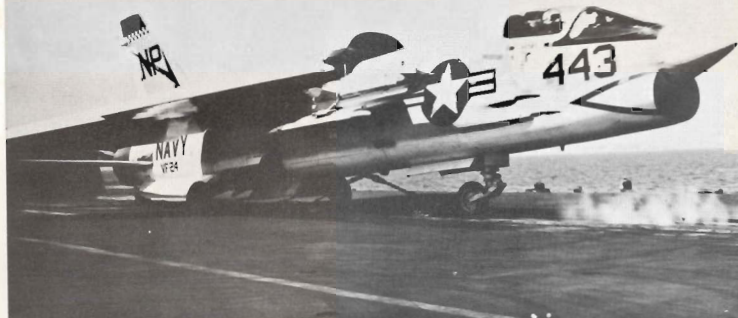
ARMAMENT DETAILS

Above: F-8E with Bullbup A missiles. (Vought)



Above: F-8E with four Sidewinder 1 infra-red homing air-to-air missiles. (Vought)
Below: F-8E armed with Zuni rockets and Bullbup B missiles. (Vought)





South China Sea, a Sidewinder equipped F-8G Crusader runs up prior to launching from the USS *Bon Homme Richard* CVA-31 for an attack on ground targets in North Vietnam. The Crusader is from VF-24, home base NAS Miramar, California. 19 May 1967, (US Navy)

VOUGHT F-8 CRUSADER

The last of the Gun Fighters

Chance Vought, having won the design competition for a new high-performance fair weather carrier-based day-fighter in 1952, started construction on two experimental models designated XF8U-1. The airframe was designed around the P&W J57-P-4A turbojet engine maintaining simplicity in systems and structure, and weight and size to a minimum. A two-position variable-incidence wing was mated to the top of the fuselage, being extended in the low speed range by the pilot, thereby improving visibility during take-offs and landings and retracting the wing for high speed flight.

Initial armament for the F8U consisted of four 20 mm. cannon mounted two on each side of the fuselage below the cockpit. A retractable rocket rack under the fuselage provided for 32 $\times$ 2.75 folding-fin rockets. In addition, two Sidewinder air-to-air missiles could be carried one on each side of the fuselage on a special launching rail.

Some other interesting features included a ram air turbine on the right side of the fuselage which could be extended into the airstream for emergency electric and hydraulic power. A retractable inflight refuelling probe is located on the left side of the fuselage just aft of the cockpit.

The XF8U-1 was delivered to Edwards Air Force Base, California, assembled, ground tested and made ready for flight. On the XF8U-1's first flight,

25 March 1955, with test pilot John Konrad at the controls, Mach 1 was exceeded in level flight. This was the first of many records to be set by the Crusader.

Upon completion of the test programme at Edwards AFB, the XF8U-1 completed its carrier trials aboard two different aircraft carriers—the huge new USS *Forrestal* CVA-59 and also the much smaller USS *Bon Homme Richard* CVA-31. No difficulty in operation or handling was encountered during the trials. The early production models of the F8U-1 were sent to Patuxent Rivers for the FIP (Fleet Introduction Programme), an accelerated eight-week course to familiarize pilots and mechanics from Squadrons VF-32 based at Cecil Field, Florida, and VF(AW)-3 from Moffett Field, California. They were selected to conduct operations and servicing of the new aircraft and on completion these two squadrons would be the first to operate the Crusader.

The next model to come off the assembly line was the F8U-1P, a photo reconnaissance version of the fighter. The lower portion of the forward fuselage was slab-sided allowing for the installation of five cameras for oblique, forward and vertical photography. The armament was deleted providing adequate space for all the photographic equipment. The F8U-1E, another change from the original -1, provided limited all-weather operating capability through the addition of special electronic equipment, a larger radar antennae, requiring a larger nose

radome. Armament and performance for the -1E model was the same as for the earlier -1. Toward the end of 1958, a newer, more powerful version, the F8U-2, was delivered to the Navy. The powerplant was the updated J57-P-16 rated at 10,700 pounds static thrust and 16,900 pounds of thrust with afterburner. External differences included two ventral fins under the aft fuselage which improved directional stability. Two small air scoops, one on each side of the vertical fin, delivered cooling air to the afterburner. Performance was quite impressive with the -2 attaining a speed of Mach 1.7.

Development was started on a tandem two-seat trainer under a Navy contract, by reworking a standard F8U-1. A new forward fuselage section with a second raised cockpit some fifteen inches higher than the forward seat providing forward visibility for the instructor pilot. Dual controls and dual ejection seats were installed. Armament consisted of two 20 mm cannons and four Sidewinder missiles. Unfortunately, due to a budget cutback, the F8U-1T never went into production. Only one aircraft was built in this configuration.

The next production model of the Crusader was the F8U-2N. Powered by a still more powerful J57-P-20 engine with 18,000 pounds of thrust in afterburner. Armament saw an increase from two to four Sidewinders. The four 20 mm cannons were retained, but the retractable rocket pack was removed in favour of increased fuel capacity. Updated solid state electronics plus a push button auto pilot reduced the pilot's workload. Following the -2N came a somewhat improved F8U-2NE with boundary layer control and a double droop leading edge to improve take-off and landing characteristics.

The only overseas order was placed by the French government for a somewhat modified Crusader with a slightly higher powered engine, an enlarged horizontal tail surface, and fuselage pylons equipped to carry the French Matra missile. The French Crusader was assigned the designation FN. It was, however, very similar to the F8U-2NE.

During the National Air Show of 1956 at Oklahoma City, the following announcement was made. "Now hear this—The Navy's F8U-1 Crusader has set a new national speed record to win the Thompson Trophy for 1956." The record flight took place at 40,000 feet over a 15.1 kilometre course at China Lake, California. Cdr. R. W. "Duke" Windsor flew the F8U-1 to a new record speed of 1,015.428 m.p.h. on 21 August 1956, far exceeding the old record speed of 822 m.p.h. Chance Vought was to receive the Collier Trophy for the conception, design and development of the F8U Crusader as the outstanding aviation achievement of 1956.

On 6 June 1956, two F8U-1's of VF-32 flew non-stop from the USS *Bon Homme Richard* off the California coast to the USS *Saratoga* CVA-60 off the east coast of Florida. This was the first West Coast aircraft carrier to East Coast aircraft carrier flight in history. The two F8U-1's flew the trip in three hours 28 minutes. The ink wasn't dry in the record books when on 16 July 1957 Major John H. Glenn, USMC, World War II and Korean War Veteran, took off from NAS Los Alamitos, California, in an F8U-1P. Just three hours 23 minutes 50.05 seconds later (including three inflight refuellings from AJ-1 tankers from VAH-6 and VAH-11), he would land at Floyd Bennett Field in New York, beating the old record set in 1955 in an F-84. Along with setting a new

speed record, "Operation Bullet", the code name assigned to the exercise, took a continuous film strip picture of the full length of the United States.

On 17 May 1958 "Operation Pipeline" saw four F8U-1 Crusaders from VX-3 along with four F3H-1 Demons complete a non-stop trans-Atlantic crossing from the US East Coast to the Sixth Fleet in the Mediterranean. A practical test demonstrating the speed with which carrier air groups can be reinforced.

Due to the high speed and complexity of the F8U, a condensed FIP programme is conducted at the Crusader College Campus by Squadron VF(AW)-3. The six-week concentrated course in flight and ground training assures smooth transition to the new equipment the pilots and mechanics will be operating. All designated squadrons have key personnel attend the college prior to actual acceptance of the F8U aircraft.

With the phasing in of the F8U into squadron usage, the high-wing aircraft is back in style. Prior to the Crusader most Navy aircraft were of a low or mid-wing design. Early in naval aviation history (the time period 1929-1934), the high wing was considered in Navy design, however, other problems discouraged Navy acceptance of the many designs forwarded.

The first delivery of the F8U-1 to an operational squadron, VF-32, was made two years to the day (25 March 1957) after the first flight of the XF8U-1. VF-32 was also to be the first in going to sea with the F8U-1 on board the USS *Forrestal* CVA-59. The second squadron to receive the F8U-1 was West Coast based VF-154, gaining their shipboard experience on board USS *Hancock* CVA-19. The USMC was also to receive the F8U; the first squadron VMF-122 based at Beaufort, S.C., and shortly thereafter, VMF-235, VMF-312, VMF-333, VMF-334 and MAG-32. Other Navy squadrons receiving the Crusader are VF-211, VF-142, VF-143 and VFP-61.

News Release.—Squadron VF-32 flying the F8U-1 Crusader wins Veteran Status on board USS *Saratoga* CVA-60 while the carrier was on its maiden voyage in the Mediterranean with the Sixth Fleet. The Crusader was given its greatest test during the Lebanon crisis in the summer of 1958. The first missions consisted of an aerial show of strength flying over Lebanon. The eleven aircraft low altitude sweep continued on down the Jordan River Valley to Jordan and then returned to the USS *Saratoga*. Other Lebanon assignments included flying combat air patrol along with normal fleet tactical problems, fighter escort missions and observation flights. The F8U-1 met the challenge and came through with flying colours.

January 1962 saw the USMC complete operation "Pine Needle". The flying of an entire Marine jet fighter squadron from MCAS El Toro, California, to Atsugi, Japan. The pilots of VMF(AW)-451 flew 18 F8U-2N Crusaders across the Pacific in seven days. The route from El Toro to Hawaii required aerial refuelling by VMRG-252 GV-1 Hercules Tankers. The next leg of the trip was to Wake Island and then to Guam with another inflight refuelling. The last leg from Guam to Atsugi did not require aerial refuelling. Total time in the air was 17 hours. Most of the trip was flown at 40,000 feet, descending to 20,000 feet during the refuelling exercise.

A Defence Department directive late in 1962 called for a redesignation of all military aircraft. The change covering the various Crusader models was as follows:



The first prototype XF8U-1 running up prior to the first flight at Edwards Air Force Base, 25 March 1955, during this flight the Crusader exceeded Mach 1. (Vought)

Old	New	Old	New
F8U-1	F-8A	F8U-1E	F-8B
F8U-1D	DF-8A	F8U-2	F-8C
F8U-1KD	QF-8A	F8U-2N	F-8D
F8U-1P	RF-8A	F8U-2NE	F-8E
F8U-1T	TF-8A	(French) FN	F-8L

From here on the text will use the new designation when referring to a particular model.

To improve the readiness of reserve squadrons, the Navy decided in 1963 to issue the earlier model F-8A's to Navy and Marine reserve pilots. The first Naval Air Station to receive the F-8A's was Dallas; since Chance Vought was adjacent to the airfield, logistic support was always readily available. During 1964, two Navy squadrons, VF-701 and VF-703, and two Marine squadrons, VMF-111 and VMF-112, would check out and fly 5,132 accident-free hours in the F-8A. Then F-8's were assigned to NAS Willow Grove, Pa., enough for one Navy and two Marine reserve squadrons. The Navy would continue to distribute the earlier models of the F-8 until 20 reserve squadrons were trained and combat ready should a national emergency arise.

Following the Gulf of Tonkin incident in August 1964, the US Navy 7th Fleet would be on station continuously in the South China Sea or the Gulf of Tonkin to support ground forces in South Vietnam and to conduct air attacks against designated targets in North Vietnam. Two and sometimes three aircraft carriers would be on station sending their aircraft wherever needed.

Aboard each 27 class aircraft carrier, there are usually two attack squadrons flying A-1 Skyraiders and A-4 Skyhawks and two fighter squadrons flying F-8's and a photo squadron detachment flying the RF-8A. The photo Crusaders escorted by F-8C's or F-8E's would go out on photo recon missions using

the information gathered to plan future strike missions. After an enemy area has been bombed, the RF-8A's and their escort would fly over the target area to photograph the results of the strike.

The A-4 Skyhawks and the A-1 Skyraiders would carry the heavy bomb loads and the F-8C's from VF-24 and F-8E's from VF-211 would fly escort. All squadron aircraft were operating off of USS *Hancock* CVA-19.

The USS *Hancock*, after completing a tour with the 7th Fleet, returned to the US. Other carriers arriving in the China Sea to support ground troop movements or to attack targets in North Vietnam were the USS *Bon Homme Richard* and the USS *Midway* CVA-41. The aircraft carriers would serve a tour of approximately seven months duty after which they would return to the US.

Meanwhile back in Dallas, Texas, Chance Vought, now part of Ling-Temco-Vought, received a defence department contract to modernize and remanufacture various models of the Crusader to extend their service life with the US Fleet at least through the year 1975. Changes to the aircraft included addition of ventral fins and new camera positions on the RF-8A. Other improvements included new wings with provisions for wing pylon stations for carrying fuel tanks or external ordnance, new landing gear and boundary layer control. A total of 448 Crusaders were remanufactured as follows:

Old Designation	Quantity Remanufactured	New Designation
F-8B	63	F-8L
F-8C	87	F-8K
F-8E	136	F-8J
F-8D	89	F-8H
RF-8A	73	RF-8G
448 total		

The XF8U-1 as it is now on permanent display at the Smithsonian Air Museum, note the minor differences and additions to the original colour scheme. (Vought)





An F7U-3 Cutlass forming with an early F8U-1 over the Dallas area. (Vought)

May 25, 1965 saw the F-8 Crusader used as a bomber for the first time in combat, as VF-162 from the USS *Oriskany* CVA-34 attacked a Viet Cong installation with 500 pound bombs near Mui Song Trau in South Vietnam. During the second tour of the USS *Hancock* with the 7th Fleet in the Gulf of Tonkin on 11 June 1966, the F-8 Crusader, flown by the C.O. Commander Harold L. Marr of VF-211, downed a MiG-17 with a Sidewinder missile and receiving credit for damaging and possibly shooting down another MiG north-east of Haiphong. A week later, 21 June 1966, another F-8 with Lt. J. G. Vampatella, also of VF-211, flying an escort mission, received some damage from ground fire, encountered a MiG-17 and using a Sidewinder missile, he scored a hit, downing the enemy aircraft.

On 1 May 1967 Lt.-Cdr. M. O. Wright of VE-211, based on board the USS *Bon Homme Richard*, while on an escort mission over North Vietnam, sighted three MiG's, dropped in behind the trailing MiG and fired a Sidewinder missile up the tailpipe, destroying the enemy fighter.

Lt. Col. Charles H. Ludden received the fifth annual Alfred A. Cunningham Award as the "Marine Aviator of the Year" for serving as C.O. of VMF(AW)-212 aboard USS *Oriskany* in Tonkin Gulf. While leading a strafing attack on enemy positions in North Vietnam in September 1965, although severely wounded, and his aircraft badly damaged, he managed to return safely to his attack carrier USS *Oriskany*.

On 19 May 1967 F-8 pilots from VF-211 and VF-24 downed four MiG-17 interceptors with air-to-air missiles while flying cover for Navy bombers near Hanoi. The kills were recorded by Cdr. Paul Speer the C.O. and Lt. j.g. Joseph Shea, both of VF-211 and Lt.-Cdr. Bobby C. Lee and Lt. Phil Wood of VF-24. Both squadrons were operating off of the USS *Bon Homme Richard* in Tonkin Gulf. In June, the USS *Ticonderoga* CVA-14 with F-8

squadrons VF-191, VF-194 and a detachment of VFP-63 returned to the US after a seven-month tour in the Vietnam area. During combat operations in both North and South Vietnam, the F-8's carried out: reconnaissance, armed escort, flak suppression and air-to-ground strike missions directing bombs and rockets on enemy targets. Meanwhile, the USS *Shangri-La* CVA-38 having completed a six-month cruise of the Mediterranean with F-8 squadrons VF-13, VF-62 and a detachment of VFP-62 returned to the US East Coast.

In March 1967, the Crusader had completed ten years of operational service during which the pilots logged more than 1,500,000 flying hours and completing more than 250,000 carrier landings. The Crusader is being operated by 30 Navy and Marine Corps squadrons plus 20 Reserve squadrons.

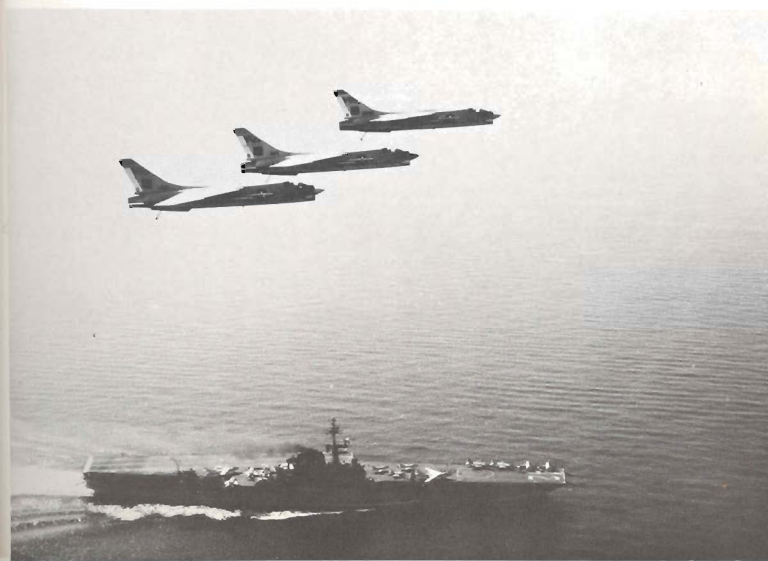
On 21 July 1967, Cdr. Marion H. "Red" Isaacs of VF-24 with five other F-8's flying cover for fighter bombers striking at the TA XA fuel storage complex north of Haiphong were suddenly confronted by eight MiG's. After a dog-fight "reminiscent of World War II—a real hassle", Cdr. Isaacs downed a MiG with a Sidewinder missile. Moments later Lt.-Cdr. Robert L. Kirkwood also of VF-24 would shoot down a MiG using his four 20 mm. cannons. During the encounter both F-8's received some damage from the MiG's. Lt.-Cdr. Ray C. "Tim" Hubbard of VF-211 also shot down a MiG using his 20 mm. cannons, while Lt. j.g. Phillip W. Dempewolf of VF-24 was credited with a probable kill. After the air battle, all aircraft landed safely on board the USS *Bon Homme Richard*. Land-based F-8's from VMF(AW)-235 operating out of DaNang, South Vietnam, recorded 9,140 day and night combat missions during 14 months of flying support for ground forces. The "Red Devils" of VMF(AW)-232 flew over 5,500 combat sorties in the ground support role, participating in every major Marine Corps operation.

Land based and carrier operating F-8 Crusaders



Above: F-8A Crusader of VF-11, see colour side-view A2. (US Navy)

Below: Three F-8E's of VF-11 in the landing pattern above their carrier USS *Franklin D. Roosevelt* CVA-42. (US Navy via R. J. Francillon)





A trio of F-8D's of VF-13 from the USS *Shangri-La*, 6th Fleet, flying along a mountainous coastline somewhere in the eastern Mediterranean. (US Navy)

serve in various roles over both North and South Vietnam—ground support, reconnaissance, fighter bomber, and fighter escort missions. Hazards are many, including the SAM (surface to air missile), a variety of large and small anti-aircraft weapons and exploding ground targets. To quote the C.O. of VF-162, Cdr. C. A. L. Swanson, "The first in against probably the most heavily defended target in the world. There's a reason for it—the F-8 has the capability to get in, get out and then function as cover. We spend more time over the beach attacking targets . . . because we've become more proficient . . . we know where to look for good targets . . . and heavy opposition".

Lt. Richard E. Wyman and Cdr. C. A. L. Swanson flying F-8's off of USS *Oriskany* CVA-34, responding to a call for help, caught three MiG-17 interceptors attacking an A-4 and an F-8 near Haiphong. Engaging the enemy in a fierce dog-fight lasting six minutes, the MiG's in olive drab camouflage blending in with the terrain, exchanged gunfire with the F-8's until finally two MiG's disengaged and headed north. The last MiG exchanged gunfire with the two F-8's until making the wrong move was hit by a Sidewinder missile fired by Lt. Wyman. The left wing fell off, and fire streaking along the fuselage, the plane cartwheeled into a rice paddy and exploded in a big ball of flame.

Due to the *Pueblo* crisis in January 1968, President Johnson called up six "Weekend Warrior" reserve Navy fighter and attack squadrons. The three F-8 fighter squadrons called up were VF-703 of Dallas, VF-661 of "Andrews AFB" and VF-931 from Willow Grove.

The assault on Khe Sanh failed due not only to the ground defenders, and the aerial resupply, but also to air support from the Navy, Marine and Air Force. Included was the F-8 flown by pilots from

VF-191 and VF-194 on board the USS *Ticonderoga*, who helped destroy enemy bunkers and weapon sites using 500 pound bombs and rockets. Also supporting the Khe Sanh defenders were VF-51 and VF-53 from the USS *Bon Homme Richard*.

More aerial combat took place on 26 June 1968, when Cdr. Lowell R. Moose Myers, flying an F-8H of VF-51, caught a MiG-21, fired a Sidewinder missile that blew the tail off. The pilot ejected. July 9 saw Lt.-Cdr. John B. Nichols of VF-191, flying an F-8E, shoot down a MiG-17 using his 20 mm. cannons and a Sidewinder missile.

Another old fashioned dog-fight, "F-8's and MiG's everywhere" best describes the next aerial encounter in which the MiG-17 came out second best versus Cdr. Guy Cane of VF-53 on 29 July. Cdr. Cane in his first MiG sighting in 186 combat missions finally lined up his target, fired a missile knocking off a portion of the MiG wing which went into a nose down spiral hitting the ground in a huge fireball.

On 1 August a MiG-21 would be downed in a team effort when Lt. George Hise of VF-153 damaged the MiG with a missile and Lt. Norman McCoy of VF-51 fired a missile that destroyed it. VF-51 and VF-53 flew this tour off the deck of the USS *Bon Homme Richard*.

The Sidewinder was used again this time by Lt. Anthony J. Nargi of VF-111 on his 111th mission. The missile flew up the tail pipe, blew the entire tail off the airplane. The pilot ejected and his orange and white parachute opened. Lt. Nargi received a rousing welcome upon landing back aboard the USS *Intrepid* CVS-11.

In November, the Reserve F-8 squadrons called up because of the *Pueblo* crisis were deactivated after returning to their home bases.

The USS *Ticonderoga* is operating for the first time with all LTV aircraft—two squadrons of F-8's,



An F-8E of VF-24 and RF-8G from VFP-61 from the USS Hancock CVA-19 forming together over the Gulf of Tonkin, 17 March 1971. (US Navy via R. J. Francillon)

VF-111 and VF-162, plus some RF-8A's with VFP-63 and two attack squadrons, VA-25 and VA-87, flying the new A-7A Corsair II light attack bomber.

History repeats itself when 12 F-8's of VF-111 and VF-162 complete a trans-Pacific flight from NAS Miramar, California, joining the carrier USS *Shangri-La* at Cubi Point in the Philippines for duty off the coast of Vietnam. With the inauguration of the bombing halt in North Vietnam, air activity was greatly reduced to missions in the south and an occasional photo recon flight over North Vietnam.

On the other side of the world in France, Squadron 12F, which was designated in October 1964 at Lann-Bihone Air Base as the first squadron to receive the FN Crusader, has racked up a total of 20,000 flying hours in six years. Squadron 14F also flying the FN was to reach that milestone six months later. The FN Crusaders are operating off of the two French Navy aircraft carriers *Foch* and *Clemenceau*.

The F-8 is probably the only jet aircraft to take off and land safely with its wings folded. The ailerons are inboard of the wing fold thereby providing lateral control. This is not S.O.P. The first folded wing flight of a Crusader occurred at Capodichino Airport, Naples, Italy, in 1960. The pilot took off

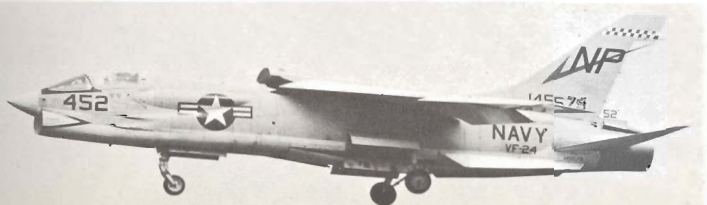
and climbed to 5,000 feet and noticing the requirement for excessive stick force, he discovered the folded wings. He checked the flying characteristics of the F-8, dumped some fuel and after being airborne, he made a somewhat fast but safe landing.

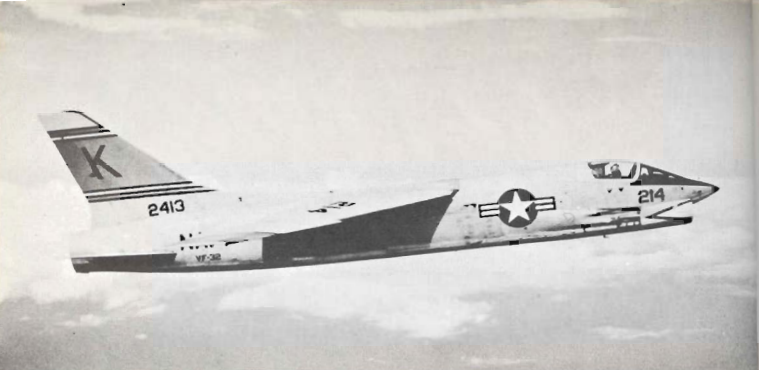
The next incident occurred at DaNang in 1966. A Marine Crusader took off with two 1,000 pound bombs on his wing pylons for a night strike. Folding the wings due to a congested ramp, the wings were never unfolded. The F-8 took off, flew around for a while and made a landing. However, due to a late landing gear extension, the gear collapsed and the aircraft veered off the runway.

One year later, again at DaNang, a Marine F-8E took off with a full 1,000 pound bomb load, six Zuni rockets and a full load of ammunition. The pilot jettisoned his bombs and rockets in Tonkin Gulf and returned to make a safe landing.

The fourth incident occurred during 1967 while an F-8E was practicing night landing on a carrier and was diverted to an auxiliary landing field to refuel. The pilot folded his wings due to limited parking space. After being fuelled, he taxied out and made an afterburner take-off. When he couldn't lower the two position wing, he discovered his folded wings. He

An F-8C of VF-24, colour details as side-view A3, (Vought)





Above: Starboard side detail shot of a F-8A of VF-32, the first fleet fighter squadron to be equipped with the Crusader, flying over NAS Cecil Field, Florida. Tail colours are yellow and black. (US Navy)

Below: Nine F-8A Crusaders of VF-32 parked on the bows of the flight deck of the USS Saratoga as the carrier enters port after a working up period at sea prior to deployment with the 6th Fleet in the Mediterranean. (US Navy)



climbed to 10,000 feet and having difficulty unfolding the wings, applied a negative "G" load on the aircraft and the port wing unfolded. Repeating the procedure, the other wing was also unfolded whereupon he proceeded to his destination and landed.

Less than three months later, another pilot took off with his wings folded; the incident was almost a carbon copy of the 1967 take-off except the pilot returned and landed with his wings still folded.

Thus with the reduction of combat missions in the Vietnam area and with newer aircraft entering the Navy's inventory, the curtain is coming down on the last of the Gun Fighters. As this is being written, there are only four squadrons of F-8 Crusaders still on active duty.

The following Squadrons have flown the F-8.

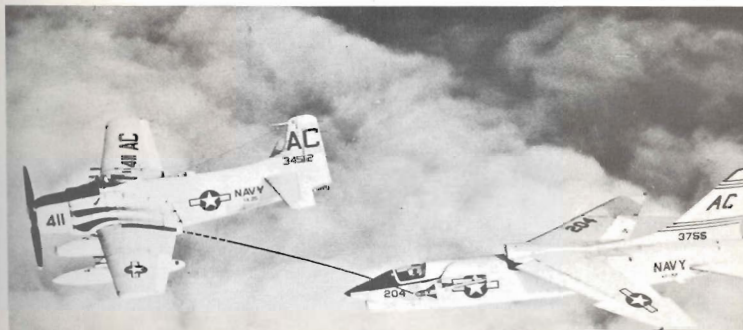
<i>Squadron Number</i>	<i>Tail Letters / Markings</i>	<i>Squadron Name</i>
VF(AW)-3	TT	
VF-11	AB	Red Rippers
VF-13	AJ	
VF-24	NE, NP	Checkertails
VF-32	AC	Swordsmen
VF-33	AE, AF	Felix
VF-51	NE, NG	Screaming Eagles
		Iron Angels
VF-53	NF	
VF-62	AJ, AK	
VF-84	AG	Jolly Rogers
VF-91	NG	Red Lightning
VF-103	AK, AJ	Sluggers
VF-111	AH, AJ, NE, NH	Sundowners
VF-122		
VF-124	NJ	Crusader College
VF-132	AE	
VF-141	NK	Iron Angels
VF-142	NK	Ghost Riders
VF-143		
VF-154	NL	Black Knights
VF-162	AH	Hunters
VF-174	AD	
VF-191	NM	Satans Kittens
VF-194	NM	Red Lightnings

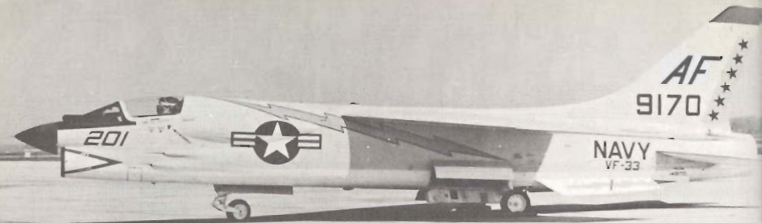
VF-211	NE, NP	Checkmates
VCP-61	SS	
VFP-62	AK, GA, AF	
VFP-63	NP, PP, AE	
VU-1, VC-1	UA	
VU-2, VC-2	JE	
VC-3		
VX-3	XC	
VX-4	XF	
VU-5, VC-5	UE	
VU-7, VC-7	UH	US Navy Squadrons
VU-8, VC-8	GF	
VU-10, VC-10	JH	

<i>US Marine Corps Squadrons</i>	<i>Tail Letters / Markings</i>	<i>Squadron Name</i>
VMF-122	DC	
VMF(AW)-212	WD	
VMF-215		
VMF(AW)-232	WT	Red Devils
VMF(AW)-235	DB	Death Angels
VMF-251	AK, DW	
VMF-312	DR	Checkerboard
VMF-321	5A	
VMF-323	WS	
VMF-333	DN	Shamrocks
VMF-334	WU, WV	
VMF-451	VM	
VMCJ-1	RM	
VMCJ-2	CY	
VMCJ-3	TN	
Hand MS-13	YU	

<i>Miscellaneous Units</i>	<i>Tail Letters / Markings</i>
FAGU	TR
NATC	
WEAPON	
TEST	
NATF	
PROJECT	
BULLET	
RESERVE	

An F-8A Crusader refuelling from an AD tanker over the Eastern Mediterranean during the Lebanon crisis. (US Navy)





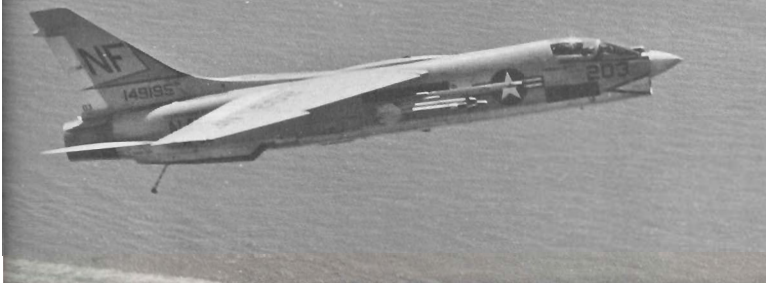
Above: An F-8E of VF-33 in yellow and black trim, see colour side-view A5, (Vought)



Left: A VF-51 F-8J on the deck of the USS Bon Homme Richard CVA-31 in the Gulf of Tonkin during late 1969. (US Navy)

Below: Clearly shown in this view is the smaller national insignia the bar of which does not cross the wing break and the matt black outlined natural metal area inboard of the tailplane. An F-8J of VF-51 over the South China Sea. (US Navy via R. J. Francillon)





Above: F-8J Crusader of VF-53 makes its approach for landing on the USS *Bon Homme Richard* CVA-31 in the Gulf of Tonkin during June 1970. (US Navy via R. J. Francillon)

Right: A pair of F-8C's forming with a RF-8A of VFP-62 over the USS *Forrestal* CVA-59, Sixth Fleet whilst operating in the Mediterranean area. (US Navy)



Below: F-8A's of VF-103 forming over the Atlantic off the Florida coast. Note yellow wing and tailplane trim outlined black. (US Navy)

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Above: Upper surface detail shot of the two VF-103 Crusaders illustrated on the previous page.

Below: A trio of Crusaders showing the additional decor of three black clubs to the yellow wing tip stripe. (US Navy)





Above & below: A pair of 'Sharkmouthed' F-8H Crusaders from VF-111, see colour side-view B5. (Vought)



Below: A Crusader of VF-111 firing a Zuni air-to-ground rocket against Communist fortifications in Vietnam. Sharkmouth and red band on tail but no 'Rising Sun', an earlier scheme than the two above. (US Navy)



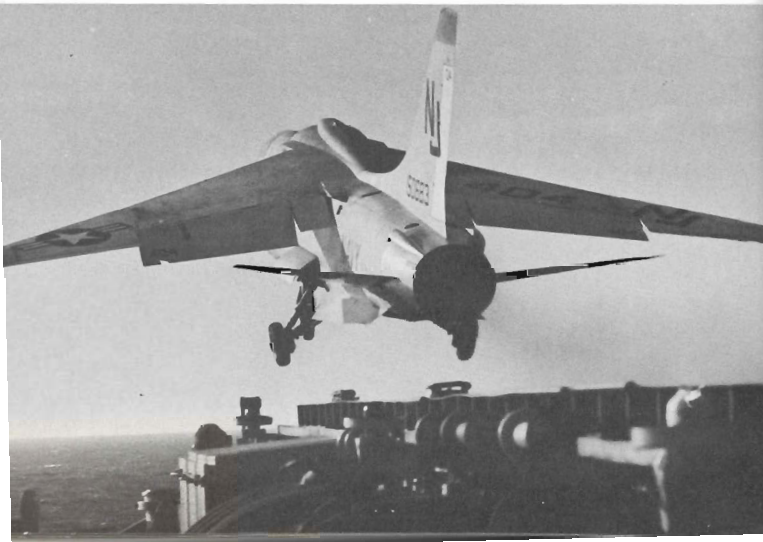
Below: F-8A's of VF-124 from NAS Moffett Field, California forming high over San Francisco. Orange dayglo, yellow and black tail trim. (US Navy)

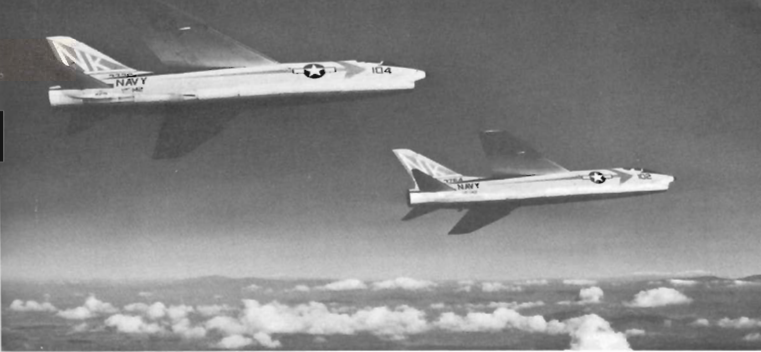




Above: Same pair of VF-124 Crusaders as illustrated on previous page banking round San Francisco Bay with the Golden Gate bridge in the background. (US Navy)

Below: An F-8E of VF-124 leaving the port catapult of the USS *Constellation* during pilot qualifications of VF-124 trainees. Note smaller insignia and size and position of wing code. (US Navy)

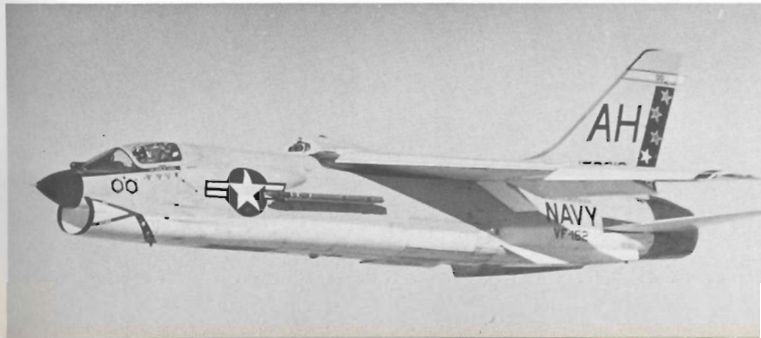




Above: A pair of F-8A's of VF-142 over NAS Miramar, serial of 104 is 143739; this unit was one of the first to be equipped with the Crusader. Below: 108 of the same unit, note tail numbers are in red an exception to the usual black. (US Navy)



Below: The Squadron Commander's aircraft of VF-162, note shape of zeros on nose, colour trim as for side-view C3. Serial 150913. (US Navy)





Above: An F-8E of VF-162 from the USS *Oriskany* CVA-34, firing 2.75 inch rockets in support of ground forces in South Vietnam. (US Navy via R. J. Francillon)



Above: A formation of F-8D Crusaders from the USS *Coral Sea* CVA-43, heading back for the relative safety of the sea and their base after an attack on Communist targets in Vietnam in mid April 1965. (US Navy via R. J. Francillon)

Below: F-8E Crusaders from VF-191 demonstrating some precise formation flying usually associated with exhibition teams. Diamond on rudder is solid red otherwise scheme is as C4. (US Navy)

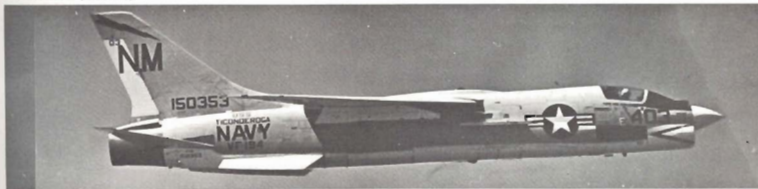




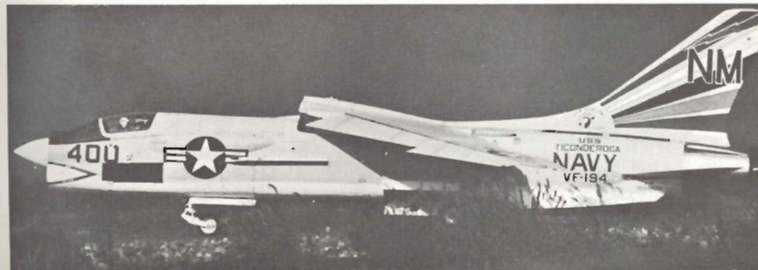
Above: F-8E Crusader in the markings of the OC VF-191, note VF-191 in stencil style lettering. (US Navy)



Above: An F-8J Crusader from VF-194 ready for catapult launching from the deck of the USS *Oriskany* CVA-34 in the South China Sea, June 1969. (US Navy)



Above: Starboard side shot of an F-8E of VF-194, note bomb pylon, red lightning flash on rudder and black area ahead of cannon ports, a common practice on the unit. Below: the mount of the OC of VF-194. (US Navy)





Above: An F-8K of VF-202 from NAS Dallas, Texas being made ready for catapult launching on the USS *Kennedy*, 1971. Note the flag of the Lone Star State on the rudder. (Vought)

Below: A couple of F-8J Crusaders in landing pattern over the USS *Hancock* CVA-19 during deployment in the Far East. Top aircraft from VF-211 the lower from VF-24. (US Navy)



Below: VF-211 put North Vietnam flags on ventral fins to indicate Migs shot down by the squadron in combat. (Vought)





Above: A pair of Crusaders of VF-211 in tight formation very close to the ground, the red and white checkerboard on both fin and rudder was used for a short time only. Aircraft are F-8A's. (US Navy)



Above left: An F-8E of VF-211 is catapulted from the flight deck of the USS *Bon Homme Richard* CVA-31 operating on Yankee Station in the Gulf of Tonkin, May 1967. (US Navy via R. J. Francillon)

Above right: 108 of VF-211 returning aboard the USS *Bon Homme Richard* in the Gulf of Tonkin, May 1967. (US Navy via R. J. Francillon)

Below: Starboard side details are clearly evident in this shot of a Crusader of VF-211 flying over the USS *Hancock* in the Gulf of Tonkin, March 1971. (US Navy via R. J. Francillon)





Above: A formation from VF-211 flying over Fujiyama, Japan. Aircraft are F-8A's. (US Navy)

Below: F-8E Crusader from the Naval Air Test Center, Patuxent River, Maryland being readied for catapulting from the aircraft carrier USS *Forrestal*. The aircraft is carrying the maximum load of 2 x 2000 lb bombs on wing pylons plus eight Zuni rockets on fuselage launchers besides its 4 x 20 mm cannon. (US Navy)



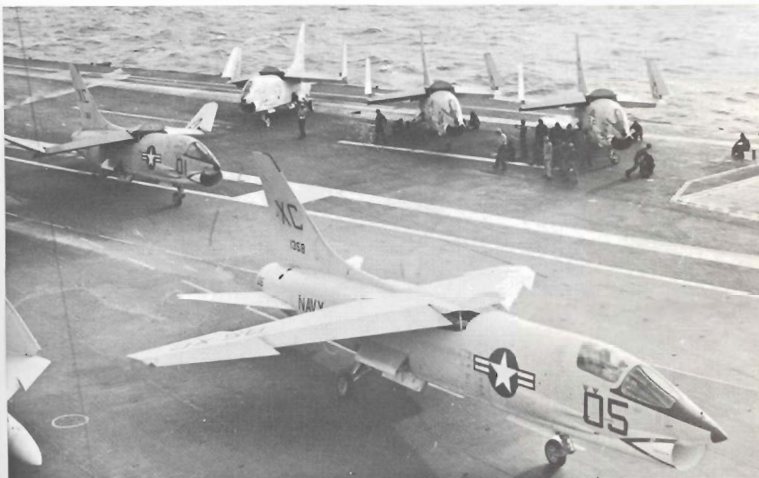
Below: An F-8A of VX-3 poised on catapult of the USS *Franklin D. Roosevelt*. (US Navy)





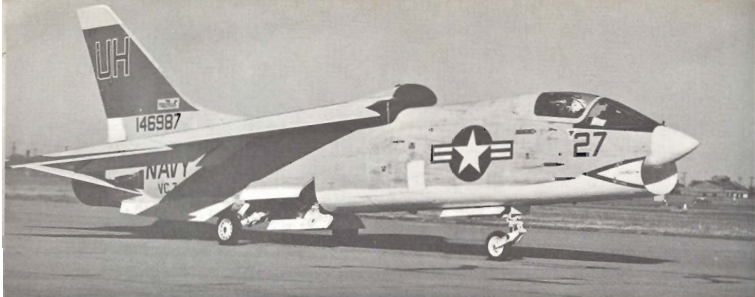
Above: F-8A of VX-3 being refuelled by an AJ-2 tanker of VAH-11. (US Navy)

Below: F-8A's of VX-3 parading to the catapult for early morning operations from the USS *Franklin D. Roosevelt*. (US Navy)



Below: F-8A Crusader from VF(AW)-3 flying over NAS Moffett Field. VF-3 is a tactical training squadron. (US Navy)





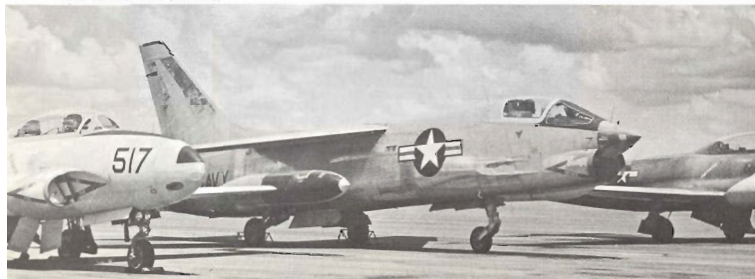
Above: F-8D of VC-7 Utility Squadron taxis out for take-off, note the nickname 'Tallyhoers' on the fin. (US Navy)



Left: F-8A of VU-2 in blue and white trim, see side-view E3. (via R. Koptzke)

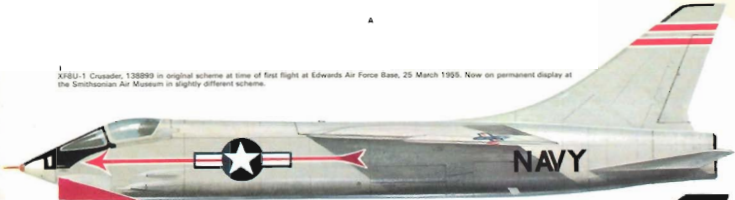


Below: Line-up of F-8A's of VU-5 with 16 in blue and yellow scheme, see front cover. (US Navy)



Below: A natural metal Crusader which is both a QF-8A and a DF-8A. It was used to control Regulus II guided missiles used as targets for Bomarc, which made it a QF-8A. It also had electronic equipment which enabled a ground-controller to fly it as a drone DF-8A though never flown as such. (US Navy)

1
XRB-1 Crusader, 135999 in original scheme at time of first flight at Edwards Air Force Base, 25 March 1955. Now on permanent display at the Smithsonian Air Museum in slightly different scheme.



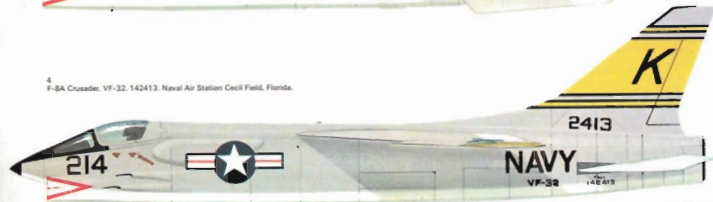
2
F-8A Crusader, VF-11, 145371.



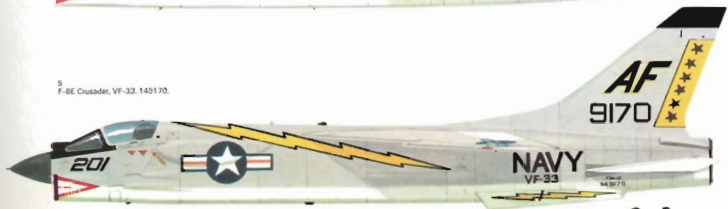
3
F-8E Crusader, VF-24, 150302. USS Hancock CVA-19.



4
F-8A Crusader, VF-32, 142413. Naval Air Station Cecil Field, Florida.



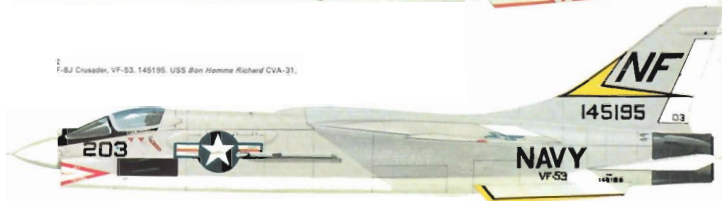
5
F-8E Crusader, VF-33, 140170.



1 F-8J Crusader, VF-51, 150670, USS *Ben Homme Richard* CVA-31, Gulf of Tonkin late 1959.



2 F-8J Crusader, VF-53, 145195, USS *Ben Homme Richard* CVA-31.



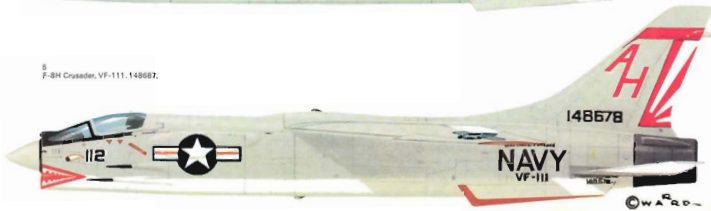
3 F-8E Crusader, VF-84, 145559, USS *Independence*. Flown by OC Air Group 8.



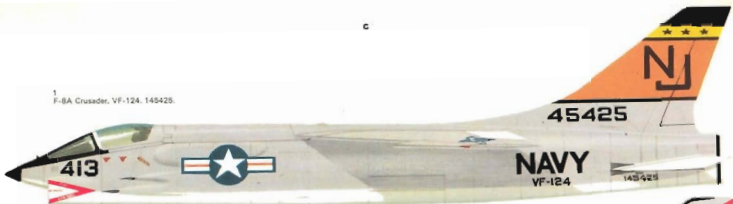
4 F-8C Crusader, VF-103, 145592, USS *Forrestal* CVA-59, Sixth Fleet, Mediterranean Area late 1962.



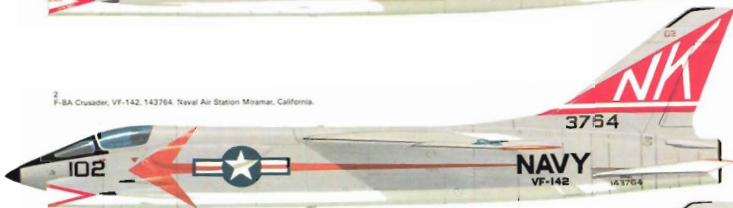
5 F-8H Crusader, VF-111, 148678.



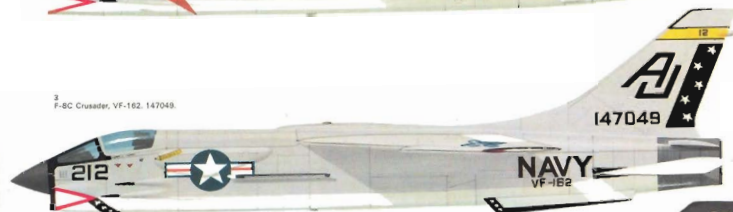
1
F-8A Crusader, VF-124, 145425.



2
F-8A Crusader, VF-142, 143764, Naval Air Station Miramar, California.



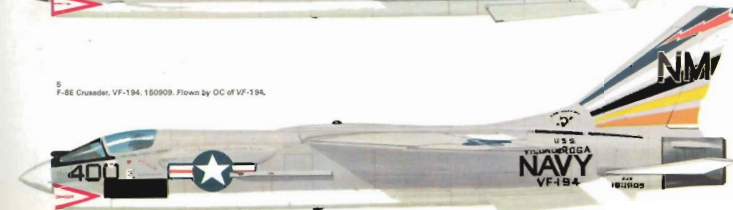
3
F-8C Crusader, VF-162, 147049.



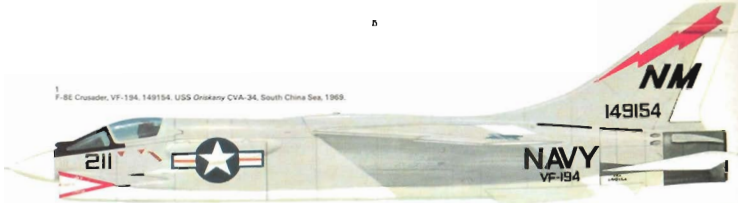
4
F-8E Crusader, VF-191, 150326. Flown by OC of VF-191.



5
F-8E Crusader, VF-194, 150909. Flown by OC of VF-194.



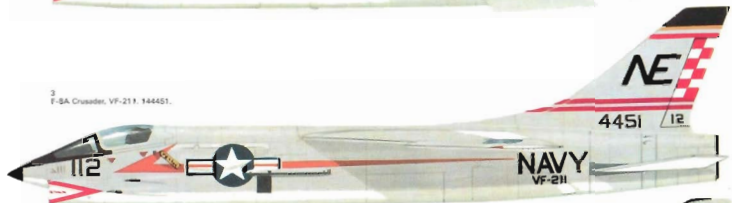
1
F-8E Crusader, VF-194, 149154, USS *Oriskany* CVA-34, South China Sea, 1969.



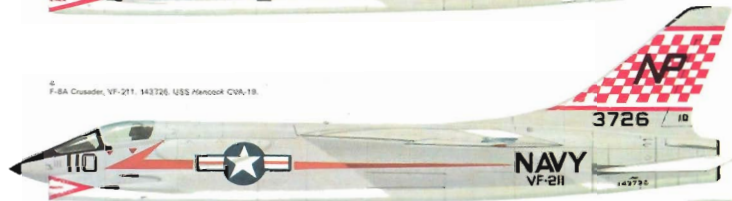
2
F-8K Crusader, VF-202, Serial unknown, Naval Air Station Dallas, Texas.



3
F-8A Crusader, VF-211, 144451.



4
F-8A Crusader, VF-211, 143726, USS *Mancock* CVA-19.



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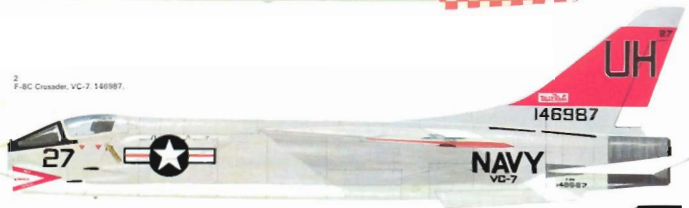
5
F-8E Crusader, VF-211, 145190, USS *Mancock* CVA-19.



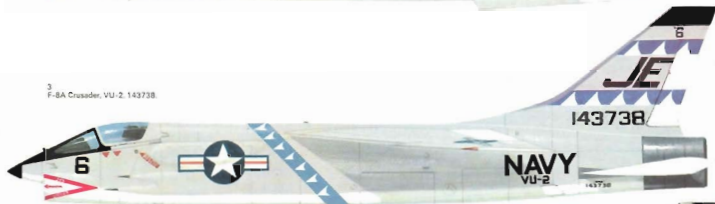
1
F-8J Crusader, VF-211, 149186, USS Hancock CVA-19.



2
F-8C Crusader, VC-7, 146987.



3
F-8A Crusader, VU-2, 143738.



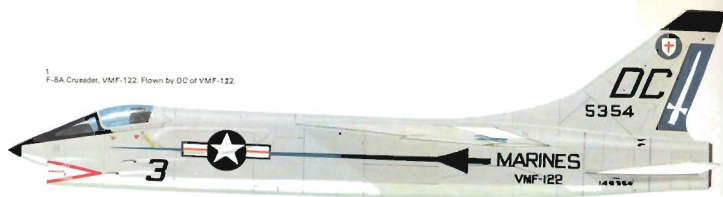
4
F-8A Crusader, 143738 in Target Tow colours.



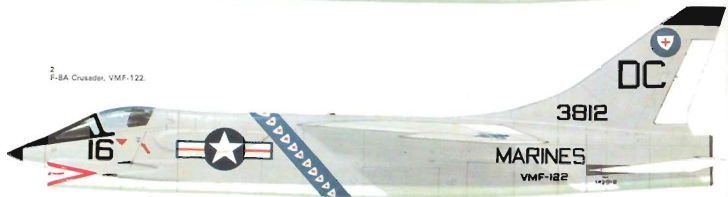
5
TF-8A Crusader.



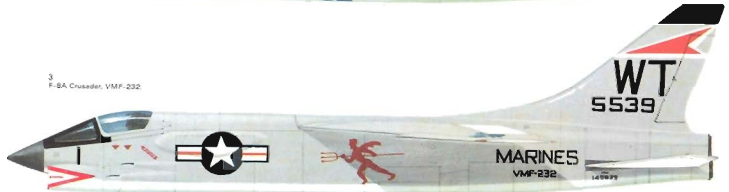
1
F-8A Crusader, VMF-122. Flown by DC of VMF-122.



2
F-8A Crusader, VMF-122.



3
F-8A Crusader, VMF-232.



4
F-8A Crusader, VMF-235.



5
F-8A Crusader, VMF-251.



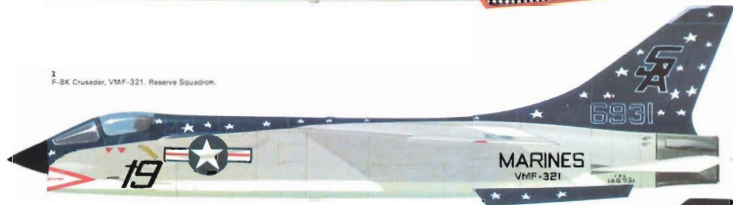
1
F-8A Crusader, VMF-312.



2
F-8E Crusader, VMF-312. Flown by the OC of VMF-312.



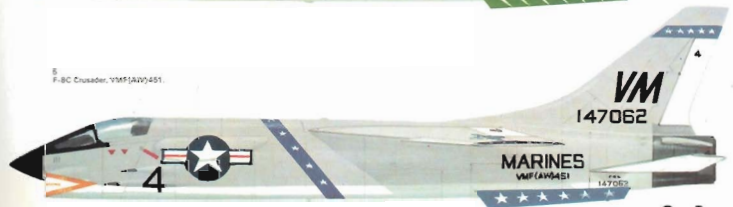
3
F-8K Crusader, VMF-321. Reserve Squadron.



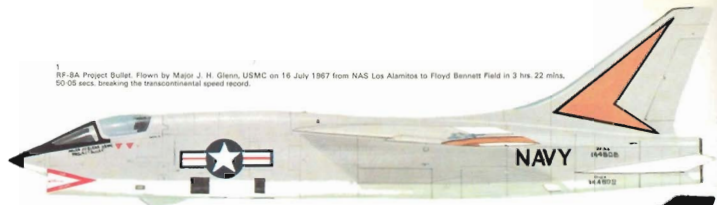
4
F-8C Crusader, VMF-333.



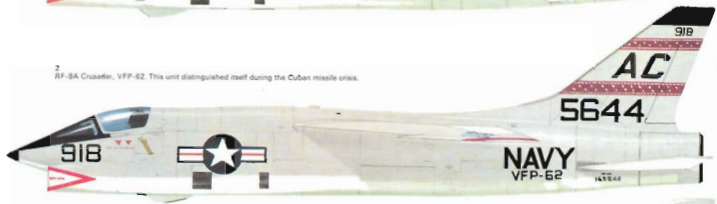
5
F-8C Crusader, VMF(AW)-451.



1
RF-8A Project Bullet. Flown by Major J. H. Glenn, USMC on 16 July 1967 from NAS Los Alamitos to Floyd Bennett Field in 3 hrs. 22 mins.
50.05 secs. breaking the transcontinental speed record.



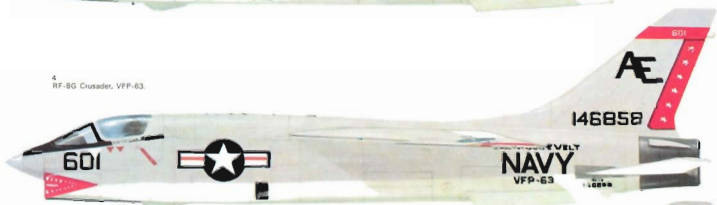
2
RF-8A Crusader, VFP-62. This unit distinguished itself during the Cuban missile crisis.



3
RF-8A Crusader, VFP-63.



4
RF-8G Crusader, VFP-63.



5
RF-8G Crusader, VFP-206. NARTU Andrews Air Force Base.





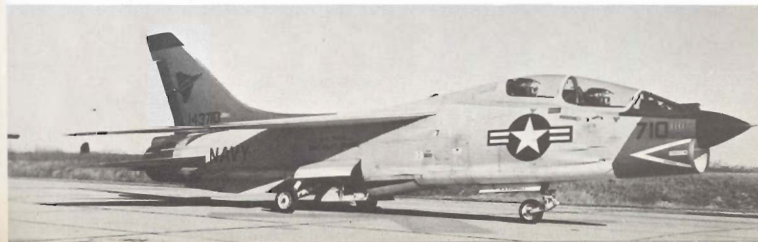
Above & below: The one and only two-place TF-8A, orange-red dayglo scheme, see side-view E5. (Vought)



Below: TF-8A awaiting its turn on the catapult of the USS *Independence* during its carrier qualification trials. (Vought)



Below: 143710 with new designation NTF-8A as painted in service with Naval Test Pilots School, Patuxent River, Maryland. (US Navy)



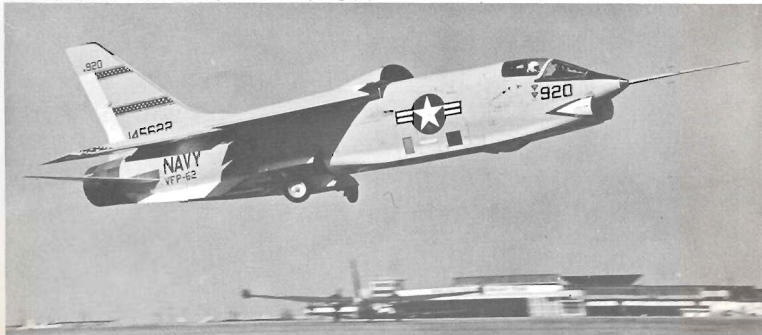


Above: RF-8A photographic Crusader prepares for catapulting from the deck of the USS Independence. Unit is VFP-62 which distinguished itself for low-level photographic reconnaissance during the Cuban missile crisis. (US Navy)



Above: RF-8A from VFP-62 over the snow covered Alps during deployment in the Mediterranean. (US Navy)

Below: RF-8A of VFP-62 taking-off from NAS Dallas, Texas, adjacent to the Ling-Temco-Vought plant. VFP-62 received a Naval Unit Commendation from President Kennedy for its low-level photography of Soviet missile sites in Cuba. (US Navy)





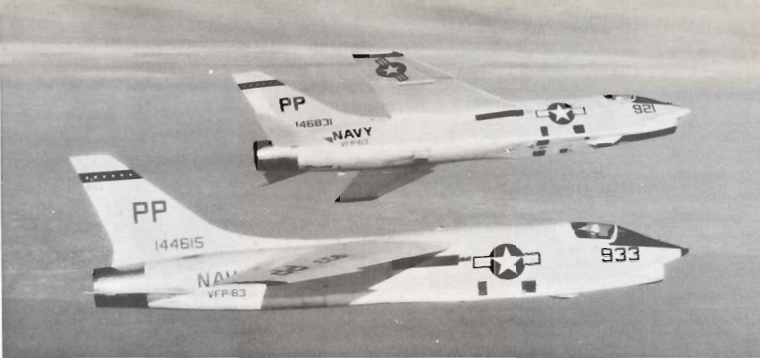
Above: An RF-8A of VFP-62, this view clearly shows the starboard camera windows and bulged fuselage aft of the cockpit, red rudder and wing tips. (US Navy)



Above: Sharkmouthed RF-8G of VFP-63 in formation with a couple of A-7E's from the carrier USS *Franklin D. Roosevelt*, red rudder and wing tip with white stars. (US Navy)

Below: An RF-8A Crusader coming in to land on the carrier USS *Midway* CVA-43 in the Gulf of Tonkin in late 1968. This view shows the matt black area from intake to camera housing and also the camera gun window in the nose cone. (US Navy via R. J. Francillon)





Above: RF-8A Crusaders of VFP-63 forming high over San Diego, California. (US Navy via R. J. Francillon)

Right: RF-8G of VFP-63 with red trim, white stars and sharkmouth, note the aircraft number is 601 but is not the same aircraft as illustrated on the opposite page. (Duane A. Kasulka)



Below: 602 of the same unit flying over the carrier USS Shangri-La CVA-38 and her plane guard destroyer. (US Navy via R. J. Francillon)



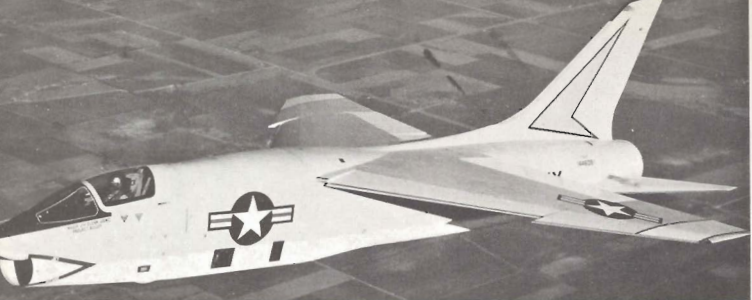


Above & below: RF-8G Crusaders of VFP-63, note the bulges on the fin of 900 containing tail snooping electronic gear. (US Navy)

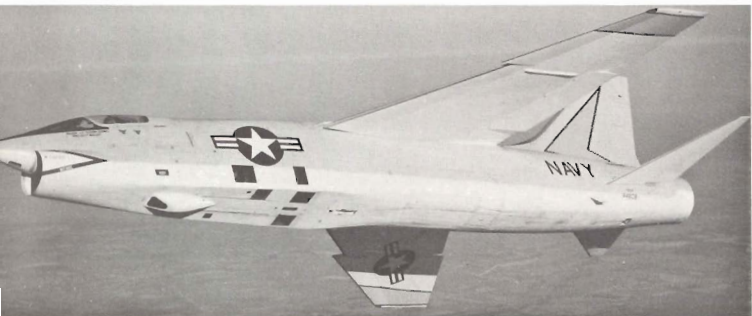


Below: With a shaft of flame from the afterburner an RF-8G of VFP-63 taking-off for a night exercise from NAS Miramar, California. (US Navy)





Above & below: 144608, the RF-8A in which Major H. Glenn, USMC broke the transcontinental speed record from NAS Los Alamitos, California to Floyd Bennett Field, New York in 3 hrs. 22 mins. 50.05 secs., on 16 July 1967, see side-view H1 for colour details. (US Navy)



Below: 144608 at a later date in service with VFP-63; the aircraft has a bronze plaque beneath cockpit giving details of the flight. (US Navy)





Above: Marine F-8A's of VMF-122 taking off in formation, see colour side-view F1 for details. (Vought)

Right: An F-8E of VMF(AW)-212 from USS *Oriskany* CVA-34. Note the similarity in squadron markings with VMF-122. See title page illustration for colour details. (Katsuhiro Minoura)



Below: Line-up of Crusaders at Dallas, those nearest camera from VMF(AW)-212, 145562 with blue tail, white flash and black JE is from VC-2. (Vought)



Below: A formation of F-8A's of VMF-232 flying along the rugged coastline of Malakal Island, Hawaii. (via Vought)

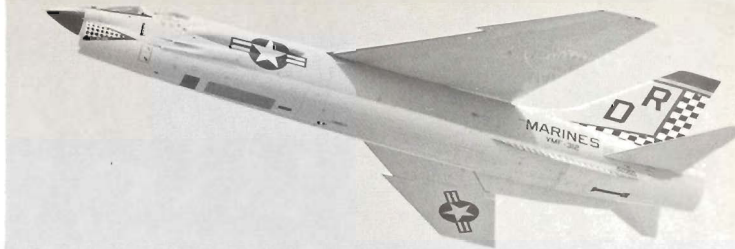




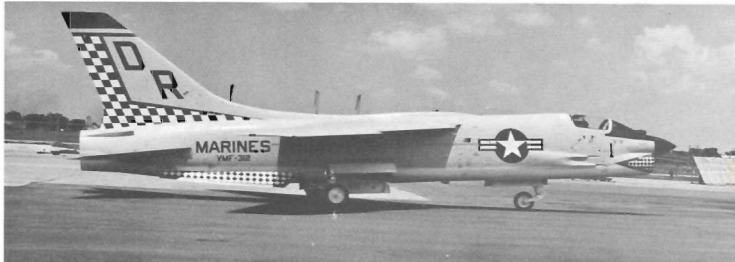
Above: An F-8E Crusader of VMF-235 attacking ground targets in Vietnam with napalm. (via Vought)

Below: F-8A Crusader of VMF-251 clearly showing the orange-red rudder and wing flashes, note the national insignia has been moved inboard to make room for the wing markings. (via Vought)





Above & below: Beautifully marked F-8E flown by the OC of VMF-312, note absence of code on upper surfaces of starboard wing. (via Vought)



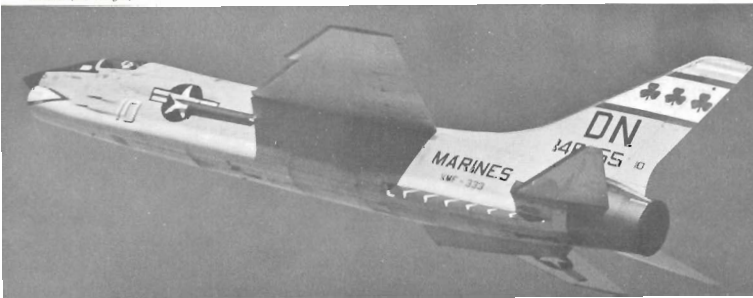
Below: An F-8C of VMF-333 taking-off from the deck of the USS *Forrestal* CVA-59. (via Vought)





Above: F-8C's of VMF-333 taxi into position for catapulting from the USS *Forrestal*.

Below: An F-8C of VMF-333 with slightly different markings. Note the aircraft number, 10 in white with black shadow. See G4 for colour details. (via Vought)



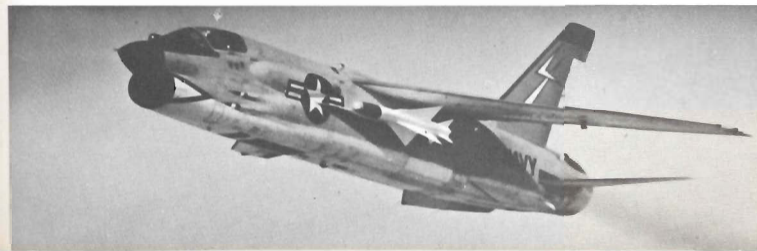


Above: Blue trimmed F-8D of VMF(AW)-451. (via Vought)

Below: Marine RF-8A from VMFJ-2. (via Vought)



Below: An F-8E Crusader taking-off with the French Navy's Matra R-530 guided missiles on fuselage pylons. (Vought)





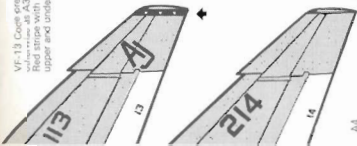
Above & below: Under surface and starboard side detail shots of Aeronavale F-8E(FN)'s, note position of aircraft number on under surface of wings and on undercarriage doors which are in natural metal. (Vought)



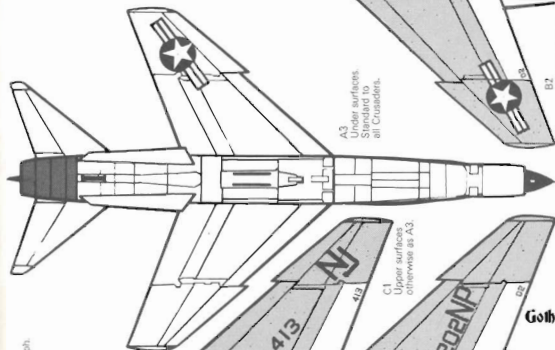
Below: Spewing black smoke out of its tailpipe, an F-8E(FN) Crusader runs up its J-57 in military power preparatory to being catapulted from the deck of the carrier *Clemenceau*. (Vought)



VF-13 Code presentation
as A3, see photograph.
Red stripe with 3 white stars,
upper and under.



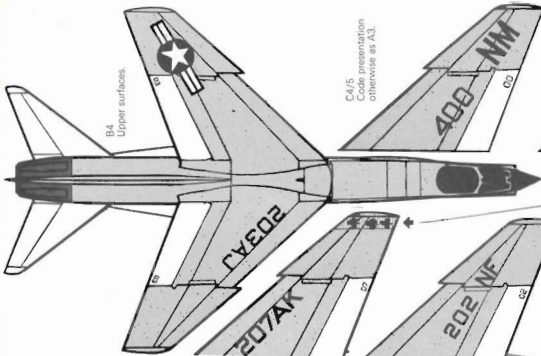
A4
Code presentation
otherwise as A3.



C1
Upper surfaces
otherwise as A3.

A3
Under surfaces.
Standard to
all Crusaders.

A3
Upper surfaces.

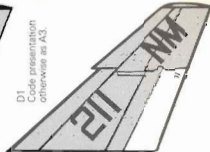


B4
Upper surfaces.

C4/5
Code presentation
otherwise as A3.

D1
Code presentation
otherwise as A3.

VF-103 Code presentation
otherwise as B4.
Yellow stripe
with 3 black clubs,
upper and under.



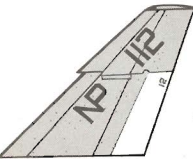
B2
Upper surfaces.

Gothscans Ltd

Gloss Gull Grey

Gloss White

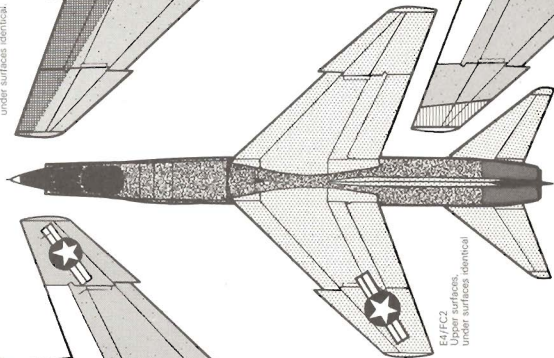
Burnished Natural Metal



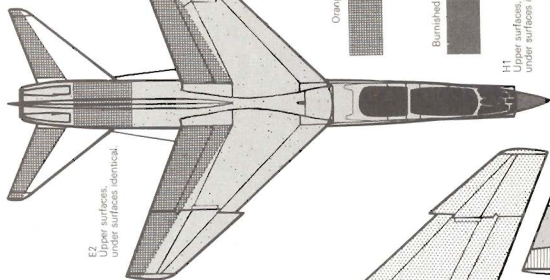
D5
Code presentation
otherwise as D3.



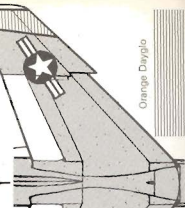
D4
Upper surfaces.



E4/FC2
Upper surfaces,
under surfaces identical



E2
Upper surfaces,
under surfaces identical.



H1
Upper surfaces,
under surfaces identical

Orange Red 1



Burnished Natural Metal



Orange Dayglo



Medium Blue



Yellow

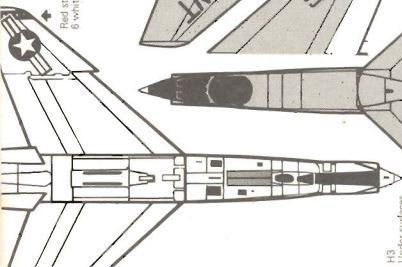


Gloss White



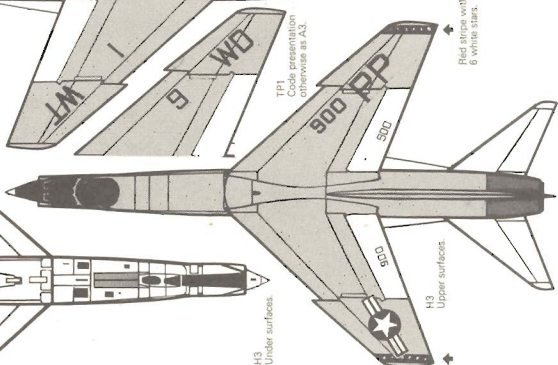
Gloss Gull Grey





Red stripe with
6 white stars.

H3
Under surfaces.

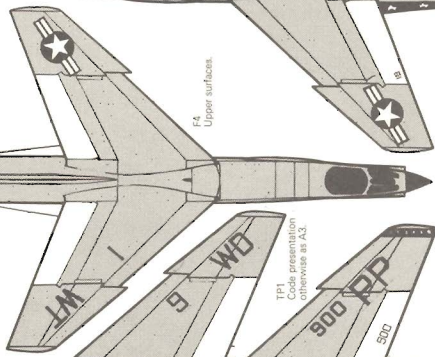


H3
Upper surfaces.

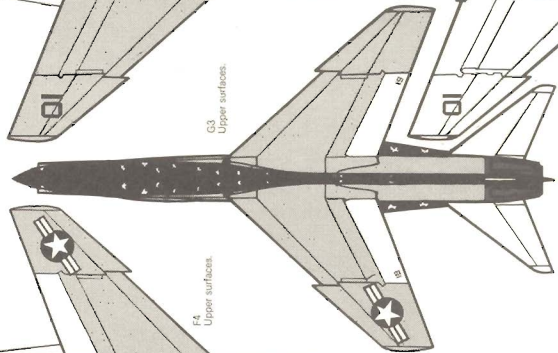
Red stripe with
6 white stars.

TP1
Code presentation
otherwise as A3.

F4
Upper surfaces.



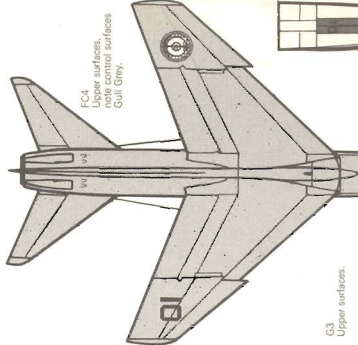
G3
Upper surfaces.



Gloss Gull Grey

Gloss White

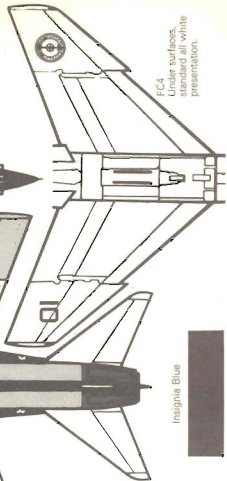
Insignia Blue



FC4
Upper surfaces,
note control surfaces
Gull Grey.



FC4
Nose detail,
aircraft letter
in black on
natural metal
nose-wheel doors.



FC4
Upper surfaces,
standard all white
presentation.

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Front cover, top to bottom:

F-8E Crusader, VF-11.

F-8A Crusader, VU-5 in Target Tow colours.

F-8E Crusader, VMF(AW)312. Flown by OC of VMF-312.

F-8E(FN) Crusader, Aeronavale.

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